ABSTRACT

A subject for the invention relates to providing a positive active material for lithium ion secondary batteries which attains a high discharge capacity and is excellent in rate characteristics and cycle characteristics.

A feature of the invention resides in that a lithium-nickel-manganese composite oxide which has a composition represented by $Li_xNi_yMn_zO_2$ wherein x is 1+1/9±(1+1/9)/10, y is 4/9±(4/9)/10, and z is 4/9±(4/9)/10, in particular, represented by the general formula $Li[Ni_{0.5-0.5X}Mn_{0.5-0.5X}Li_X]O_2$ wherein X satisfies $0.05 \leq X \leq 0.11$, and has a crystal structure belonging to the monoclinic system and having a space group of C12/m1 (No. 12) is used as a positive-electrode material. The lithium-nickel-manganese composite oxide preferably is one in which in X-ray powder diffractometry using a Cu-K_α ray, the peak intensity ratio $I_{(002)}/I_{(13-3)}$ between the (002) plane and the (13-3) plane in terms of Miller indexes *hkl* on the assumption of belonging to C12/m1 (No. 12) of the monoclinic system is 1.35 or higher.